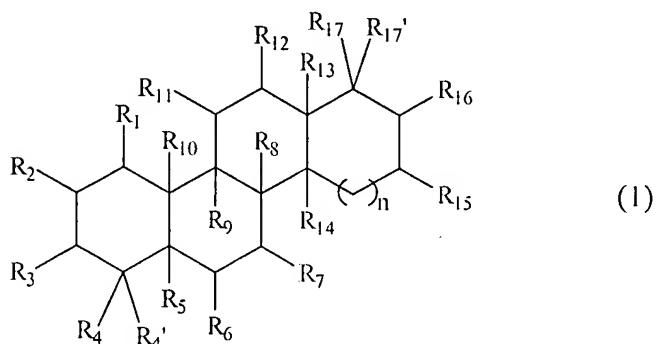


In the claims:

Please amend the claims as follows:

-
1. (currently amended) A compound of formula (1):



wherein

each of R₁, R₂, R₇, R₁₁, R₁₂, R₁₅, and R₁₆, independently, is hydrogen, hydroxy, amino, carboxyl, oxo, halo, sulfonic acid, -O-sulfonic acid, or alkyl that is optionally inserted with -NH-, -N(alkyl)-, -O-, -S-, -SO-, -SO₂-, -O-SO₂-, -SO₂-O-, -SO₃-O-, -CO-, -CO-O-, -O-CO-, -CO-NH-, -CO-N(alkyl)-, -NH-CO-, or -N(alkyl)-CO-, and further optionally substituted with hydroxy, halo, amino, carboxyl, sulfonic acid, or -O-sulfonic acid;

R₄ is hydrogen, hydroxy, amino, carboxyl, halo, sulfonic acid, -O-sulfonic acid, alkyl that is optionally inserted with -NH-, -N(alkyl)-, -O-, -S-, -SO-, -SO₂-, -O-SO₂-, -SO₂-O-, -SO₃-O-, -CO-, -CO-O-, -O-CO-, -CO-NH-, -CO-N(alkyl)-, -NH-CO-, or -N(alkyl)-CO-, and further optionally substituted with hydroxy, halo, amino, carboxyl, sulfonic acid, or -O-sulfonic acid; or R₄ together with R_{4'} is oxo;

R_{4'} is hydrogen, hydroxy, amino, carboxyl, halo, sulfonic acid, -O-sulfonic acid, alkyl that is optionally inserted with -NH-, -N(alkyl)-, -O-, -S-, -SO-, -SO₂-, -O-SO₂-, -SO₂-O-, -SO₃-O-, -CO-, -CO-O-, -O-CO-, -CO-NH-, -CO-N(alkyl)-, -NH-CO-, or -N(alkyl)-CO-,

and further optionally substituted with hydroxy, halo, amino, carboxyl, sulfonic acid, or -O-sulfonic acid; or R₄ together with R₄ is oxo;
each of R₁₇, and R_{17'}, independently, is hydrogen, hydroxy, amino, carboxyl, halo, sulfonic acid, -O-sulfonic acid, or alkyl that is optionally inserted with -NH-, -N(alkyl)-, -O-, -S-, -SO-, -SO₂-, -O-SO₂-, -SO₂-O-, -SO₃-O-, -CO-, -CO-O-, -O-CO-, -CO-NH-, -CO-N(alkyl)-, -NH-CO-, or -N(alkyl)-CO-, and further optionally substituted with hydroxy, halo, amino, carboxyl, sulfonic acid, or -O-sulfonic acid;
R₃ is X-Y-, wherein X is hydrogen, amino, carboxyl, halo, sulfonic acid, -O-sulfonic acid, or alkyl; Y is -S-, -NH-, -N(alkyl)-, -SO-, -SO₂-, -O-SO₂-, -SO₂-O-, -SO₃-O-, -CO-, -O-CO-, -CO-NH-, -CO-N(alkyl)-, -NH-CO-, or -N(alkyl)-CO-;
R₅ and R₆, together, are -O-; or R₅ and R₆, together, are a double bond between C-5 and C-6, and R₇ is oxo;
each of R₈, R₉, R₁₀, R₁₃, and R₁₄, independently, is hydrogen, alkyl, haloalkyl, hydroxyalkyl, alkoxy, hydroxy, or amino; and
n is 0, 1, or 2; and provided that when R¹, R², R⁴, R^{4'}, R⁸, R⁹, R¹¹, R¹², R¹⁴, R¹⁵, R¹⁶, and R¹⁷ are hydrogen; R¹⁰ and R¹³ are CH₃; R⁵ and R⁶ together are a double bond between C-5 and C-6; R⁷ is hydrogen or oxo; R^{17'} is CH₃CH(CH₂)₃CH(CH₃)₂; and n is 0, then R³ is (CH₃CH₂)₃HN⁽⁺⁾OSO₂O- or X-Y- wherein X is hydrogen, amino, carboxyl, halo, sulfonic acid, -O-sulfonic acid, or alkyl; Y is -S-, -NH-, -N(alkyl)-, -SO-, -SO₂-, -O-SO₂-, -SO₂-O-, -CO-, -O-CO-, -CO-NH-, -CO-N(alkyl)-, -NH-CO-, or -N(alkyl)-CO-.

2. (Original) The compound of claim 1, wherein X is hydrogen or amino, and Y is -O-SO₂-, -SO₂-O-, -SO₃-O-, -CO-, -CO-O-, -O-CO-, -CO-NH-, -CO-N(alkyl)-, -NH-CO-, or -N(alkyl)-CO-.

3. (Withdrawn)

4. (Withdrawn)

5. (Withdrawn)

6. (Withdrawn)

7. (Withdrawn)

8. (Withdrawn)

9. (Withdrawn)

10. (Withdrawn)

11. (Withdrawn)

12. (Original) The compound of claim 1, wherein R₅ and R₆, together, are a double bond between C-5 and C-6, and R₇ is oxo.

13. (Original) The compound of claim 12, wherein X is hydrogen or amino, and Y is -O-SO₂-, -SO₂-O-, -SO₃-O-, -CO-, -CO-O-, -O-CO-, -CO-NH-, -CO-N(alkyl)-, -NH-CO-, or -N(alkyl)-CO-.

14. (Original) The compound of claim 13, wherein X is hydrogen, and Y is -SO₃-O-.

15. (Original) The compound of claim 14, wherein R₁, R₂, R₄, R_{4'}, R₇, R₈, R₉, R₁₁, R₁₂, R₁₄, R₁₅, R₁₆, and R₁₇ are hydrogen; and each of R₁₀, R₁₃, and R₁₇, independently, is alkyl.

16. (Cancelled) The compound of claim 15, wherein the compound is 7-keto-cholesterol-3-sulfate.

17. (Withdrawn)

18. (Withdrawn)

19. (Withdrawn)

20. (Withdrawn)

21. (Withdrawn)

22. (Withdrawn)

23. (Withdrawn)

24. (Withdrawn)

25. (Withdrawn)

26. (Withdrawn)

27. (Withdrawn)

28. (Withdrawn)

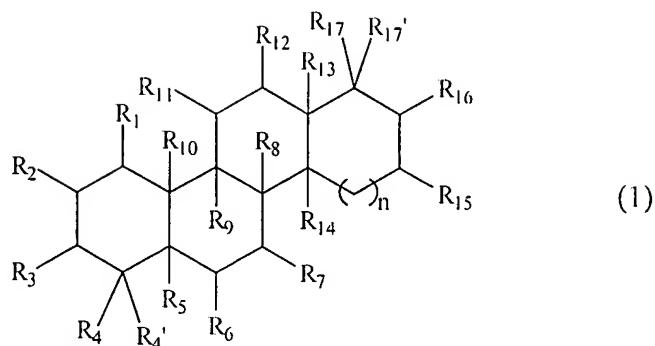
29. (Withdrawn)

30. (Withdrawn)

31. (Withdrawn)

32. (Withdrawn)

33. (Currently amended) A pharmaceutical composition comprising a compound of formula (1):



wherein:

each of R₁, R₂, R₇, R₁₁, R₁₂, R₁₅, and R₁₆, independently, is hydrogen, hydroxy, amino, carboxyl, oxo, halo, sulfonic acid, -O-sulfonic acid, or alkyl that is optionally inserted with -NH-, -N(alkyl)-, -O-, -S-, -SO-, -SO₂-, -O-SO₂-, -SO₂-O-, -SO₃-O-, -CO-, -CO-O-, -O-CO-, -CO-NH-, -CO-N(alkyl)-, -NH-CO-, or -N(alkyl)-CO-, and further optionally substituted with hydroxy, halo, amino, carboxyl, sulfonic acid, or -O-sulfonic acid;

R₄ is hydrogen, hydroxy, amino, carboxyl, halo, sulfonic acid, -O-sulfonic acid, alkyl that is optionally inserted with -NH-, -N(alkyl)-, -O-, -S-, -SO-, -SO₂-, -O-SO₂-, -SO₂-O-, -SO₃-O-, -CO-, -CO-O-, -O-CO-, -CO-NH-, -CO-N(alkyl)-, -NH-CO-, or -N(alkyl)-CO-, and further optionally substituted with hydroxy, halo, amino, carboxyl, sulfonic acid, or -O-sulfonic acid; or R₄ together with R_{4'} is oxo;

R_{4'} is hydrogen, hydroxy, amino, carboxyl, halo, sulfonic acid, -O-sulfonic acid, alkyl that is optionally inserted with -NH-, -N(alkyl)-, -O-, -S-, -SO-, -SO₂-, -O-SO₂-, -SO₂-O-, -SO₃-O-, -CO-, -CO-O-, -O-CO-, -CO-NH-, -CO-N(alkyl)-, -NH-CO-, or -N(alkyl)-CO-, and further optionally substituted with hydroxy, halo, amino, carboxyl, sulfonic acid, or -O-sulfonic acid; or R_{4'} together with R₄ is oxo;

each of R₁₇, and R_{17'}, independently, is hydrogen, hydroxy, amino, carboxyl, halo, sulfonic acid, -O-sulfonic acid, or alkyl that is optionally inserted with -NH-, -N(alkyl)-, -O-, -S-, -SO-, -SO₂-, -O-SO₂-, -SO₂-O-, -SO₃-O-, -CO-, -CO-O-, -O-CO-, -CO-NH-, -CO-N(alkyl)-, -NH-CO-, or -N(alkyl)-CO-, and further optionally substituted with hydroxy, halo, amino, carboxyl, sulfonic acid, or -O-sulfonic acid;

R₃ is X-Y-, wherein X is hydrogen, amino, carboxyl, halo, sulfonic acid, -O-sulfonic acid, or alkyl; Y is -S-, -NH-, -N(alkyl)-, -SO-, -SO₂-, -O-SO₂-, -SO₂-O-, -SO₃-O-, -CO-, -O-CO-, -CO-NH-, -CO-N(alkyl)-, -NH-CO-, or -N(alkyl)-CO-;

R₅ and R₆, together, are -O-; or R₅ and R₆, together, are a double bond between C-5 and C-6, and R₇ is oxo;

each of R₈, R₉, R₁₀, R₁₃, and R₁₄, independently, is hydrogen, alkyl, haloalkyl, hydroxylalkyl, alkoxy, hydroxy, or amino; and

n is 0, 1, or 2; provided that when R¹, R², R⁴, R^{4'}, R⁸, R⁹, R¹¹, R¹², R¹⁴, R¹⁵, R¹⁶, and R¹⁷ are hydrogen; R¹⁰ and R¹³ are CH₃; R⁵ and R⁶ together are a double bond between C-5 and C-6; R⁷ is hydrogen or oxo; R¹⁷ is CH₃CH(CH₂)₃CH(CH₃)₂; and n is 0, then R³ is (CH₃CH₂)₃HN⁽⁺⁾(-OSO₂O- or X-Y- wherein X is hydrogen, amino, carboxyl, halo, sulfonic acid, -O-sulfonic acid, or alkyl; Y is -S-, -NH-, -N(alkyl)-, -SO-, -SO₂-, -O-SO₂-, -SO₂-O-, -CO-, -O-CO-, -CO-NH-, -CO-N(alkyl)-, -NH-CO-, or -N(alkyl)-CO-;

and a pharmaceutically acceptable carrier.

34. (Original) The composition of claim 33, wherein X is hydrogen or amino, and Y is -O-SO₂-, -SO₂-O-, -SO₃-O-, -CO-, -CO-O-, -O-CO-, -CO-NH-, -CO-N(alkyl)-, -NH-CO-, or -N(alkyl)-CO-.

35. (Withdrawn)

36. (Withdrawn)

37. (Withdrawn)

38. (Withdrawn)

39. (Withdrawn)

40. (Withdrawn)

41. (Withdrawn)

42. (Withdrawn)

43. (Original) The composition of claim 33, wherein R₅ and R₆, together, are a double bond between C-5 and C-6, and R₇ is oxo.

44. (Original) The composition of claim 33, wherein X is hydrogen or amino, and Y is -O-SO₂-, -SO₂-O-, -SO₃-O-, -CO-, -CO-O-, -O-CO-, -CO-NH-, -CO-N(alkyl)-, -NH-CO-, or -N(alkyl)-CO-.

45. (Original) The composition of claim 44, wherein X is hydrogen, and Y is -SO₃-O-.
 46. (Original) The composition of claim 45, wherein R₁, R₂, R₄, R_{4'}, R₇, R₈, R₉, R₁₁, R₁₂, R₁₄, R₁₅, R₁₆, and R₁₇ are hydrogen, and each of R₁₀, R₁₃, and R_{17'}, independently, is alkyl.
 47. (Cancelled) The composition of claim 46, wherein the compound is 7-keto-cholesterol-3-sulfate.
 48. (Withdrawn)
 49. (Withdrawn)
 50. (Withdrawn)
 51. (Withdrawn)
 52. (Withdrawn)
 53. (Withdrawn)
 54. (Withdrawn)
 55. (Withdrawn)
 56. (Withdrawn)
 57. (Withdrawn)
 58. (Withdrawn)
 59. (Withdrawn)
 60. (Withdrawn)
 61. (Withdrawn)
 62. (Withdrawn)
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